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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 47176	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/IT 03/00416	International filing date (day/month/year) 02.07.2003	Priority date (day/month/year) 09.07.2002
International Patent Classification (IPC) or both national classification and IPC B65H19/26		
Applicant FABIO PERINI S.P.A.		



- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 4 sheets.

- This report contains indications relating to the following items:

- | | | |
|------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I | <input checked="" type="checkbox"/> | Basis of the opinion |
| II | <input type="checkbox"/> | Priority |
| III | <input type="checkbox"/> | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| IV | <input type="checkbox"/> | Lack of unity of invention |
| V | <input checked="" type="checkbox"/> | Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| VI | <input type="checkbox"/> | Certain documents cited |
| VII | <input type="checkbox"/> | Certain defects in the international application |
| VIII | <input type="checkbox"/> | Certain observations on the international application |

Date of submission of the demand 03.02.2004	Date of completion of this report 08.09.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Haaken, W Telephone No. +31 70 340-4278 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IT 03/00416**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-7 as published

Claims, Numbers

1-14 filed with telefax on 05.05.2004

Drawings, Sheets

1/2-2/2 as published

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/IT 03/00416**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-14
	No: Claims	
Inventive step (IS)	Yes: Claims	1-14
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IT 03/00416

Closest prior art

US 4 487 377 (D1) discloses a rewinder that differs from the preamble of claim 1 in that a rolling surface is used instead of an arm and lifting assembly for the feeding of cores into the winding zone. Starting with the problem to replace the complicated core feeding assembly by a simpler mechanism, the skilled person finds the rolling surface disclosed in US 5 853 140 (D2) to substitute said mechanism.

Thus, the skilled person is able to construct a rewinding machine according to the preamble of claim 1. Both the winders of D1 and D2 use rotating discs to apply the glue in the shape of annular rings to the cores.

Problem

The core cannot be accelerated angularly before coming into contact with the web material, as there is immediately an adhesive effect between web and core.

Solution

The glue is applied to the surface of the core along a line parallel to the axis of the core.

Inventive Step

The person skilled would not, after already having combined D1 with D2, go for another document to solve the problem posed. The subject matter of claim 1 is therefore not only novel over the prior art but also involves an inventive step. The same applies accordingly to the independent method claim 8.

EPO - DG 1

17. 08. 2004

PCT/IT03/00416
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R 47176 - VIII/04

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(47)

Claims

1. A rewinding machine to form logs of wound web material, comprising:

- a first winding roller (1);
- 5 • a second winding roller (3);
- a nip (5) defined between said first and said second winding roller, through which said web material is fed (7);
- a rolling surface (8), extending upstream of said nip in relation to the direction of feed of the web material and defining, with the first winding
- 10 roller (1), a channel into which winding cores are fed, said channel having an inlet (9) and an outlet (11);
- a feeder (13) to feed winding cores into said channel;
- a severing device (15) to sever the web material upon termination of
- 15 winding a log, wherein said severing device (15) acts against the surface of the first winding roller (1) to pinch the web material (7) against said first winding roller (1), the severing device having a different feed speed to the peripheral speed of the first winding roller during contact with the web material;

characterized in that: said severing device is disposed to operate on the web

20 material in a position upstream of the inlet end of said channel, in relation to the direction of feed (f7) of the web material; said first winding roller (1) has suction openings on its cylindrical surface; between the position in which said severing device (15) operates and the inlet of said channel a suction box (17) is provided inside said first winding roller, initial and final edges of the web

25 material produced by severing performed by the severing device being held via the suction openings on said first winding roller to transfer the initial edge to a new core being fed into said channel; and that glue is applied to the surface of the core along a line parallel to the axis of said core. 2.

30 Rewinding machine as claimed in claim 1, characterized in that the severing device (15) has a lower feed speed than the peripheral speed of the first winding roller during contact with the web material.

3. Rewinding machine as claimed in claim 1 or 2, characterized in

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that said feeder is controlled to bring the core into contact with the web material after severing.

4. Rewinding machine as claimed in one or more of the previous claims, characterized in that said feeder is controlled such as to cause the
5 core to rest against the surface of the first roller at the inlet of the feed channel, when the final edge and the initial edge of the web material obtained by tearing have already moved beyond the inlet of said channel.

5. Rewinding machine as claimed in one or more of the preceding claims, characterized in that: said first winding roller (1) has a cylindrical
10 surface with annular bands with a high friction coefficient and annular bands with a low friction coefficient; said severing device has a plurality of pressers (25); and said pressers (25) are positioned in relation to said first winding roller so that they press against it at the bands with a low friction coefficient.

6. Rewinding machine as claimed in one or more of the previous
15 claims, characterized in that said suction openings are distributed over the entire circumferential extension of said first winding roller (1).

7. Rewinding machine as claimed in one or more of the previous claims, characterized in that said severing device (15) is provided with a rotary movement during action on the web material.

20 8. Method for producing logs of wound web material, comprising the phases of:

- feeding the web material (7) along a feed path;
- arranging a first and a second winding roller (1, 3) defining between them a nip (5) through which to feed the web material (7);
- 25 • arranging a rolling surface (8) extending upstream of said nip (5) in relation to the direction of feed (f7) of the web material along said path, said rolling surface and said first winding roller (1) defining a channel into which winding cores are fed, said channel having an inlet (9) and an outlet (11);
- winding a first log (R) around a first winding core (A);
- 30 • upon termination of winding said first log (R), severing the web material to create an initial edge and a final edge, by pinching said web material with a severing device (15), said severing device (15) modifying the feed speed of

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the web material to cause it to tear, feeding a new winding core (A), anchoring the initial edge to the new core and starting to wind a second log (R);

characterized in that:

- 5 • the initial edge and the final edge are temporarily held on the surface of the winding roller;
- said new core (A) is fed into said channel synchronously to the movement of the initial edge of the web material, so that the contact point between the new core and the web material driven around said first winding roller is
- 10 upstream of the initial edge in relation to the direction of feed of the web material along said path;
- and glue is applied to the surface of the core along a line parallel to the axis of said core.

9. Method as claimed in claim 8, characterized in that the web

15 material (7) is severed upstream of the inlet (9) of said channel, in relation to the direction of feed (f7) of the web material along said path and is fed, continuing to adhere to the first winding roller (1), to a position downstream of the position in which said winding core is pressed against the first winding roller.

20 10. Method as claimed in claim 8 or 9, characterized in that said initial edge and said final edge are held on the cylindrical surface of the first winding roller (1) by suction.

11. Method as claimed in one or more of claims 8 to 10, characterized in that said severing device (15) slows the web material to

25 cause it to tear downstream of the contact point between it and the web material.

12. Method as claimed in one or more of claims 8 to 11, characterized in that said severing device (15) pinches the web material against the cylindrical surface of the first winding roller (1).

30 13. Method as claimed in one or more of claims 8 to 12, characterized in that said feeder is controlled to bring the core into contact with the web material after severing

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14. Method as claimed in one or more of claims 8 to 13,
characterized in that said feeder is controlled such as to cause the core to rest
against the surface of the first roller at the inlet of the feed channel, when the
final edge and the initial edge of the web material obtained by tearing have
5 already moved beyond the inlet of said channel.